

IMPROVED EFFICIENCY OF PASSENGER TRANSPORTATION THROUGH EXTENSIVE INTRODUCTION OF INNOVATIVE TECHNOLOGIES

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Rail passenger transportation plays an important role for people in any developed country. Unfortunately, in Ukraine rail passenger transportation is not rather effective due to some reasons. Among them we should mention a poor state of rail tracks and rolling stock, low traffic speeds and lack of high speed lines. Anyway introduction of high speed passenger transport means may be a rational solution to these problems. Implementation of high speed transportation requires solution of many problems. The research into economic feasibility, geopolitical location, possible routes, passenger flow dynamics and some others are still in progress.

In February 22, 2018 the Ministry of Infrastructure of Ukraine signed the memorandum on launching the project of the transport innovations HypeUA. This memorandum will start the development of innovative transport technologies in Ukraine, and first of all, the high speed transport system Hyperloop [1]. According to the Memorandum the issue of high importance for today is the task to implement high speed transportation in Ukraine which will allow higher competitiveness, lower losses of passenger transportation and comprehensive development of Ukrainian railways.

The analysis of existing state and development of high speed passenger transportation in Ukraine and abroad has proved that, unlike European countries, Ukraine does not have public support of rail infrastructure. Approximately 90% of Ukrainian rolling stock is worn-out, railway tracks require considerable general overhaul. Therefore, the maximum speed of passenger transportation by Hyundai trains is 160 km/ph, and for conventional trains it ranges from 20 to 117 km/ph.

Actually, operation of high-speed trains needs dedicated lines or magnetic suspension tracks. Though the launch of day-long high-speed Hyundai trains with skilled train attendants and comfortable seats has confirmed the feasibility of their implementation even on conventional lines. Over the course of five years 12 million passengers have used this high-speed service [2]. But, only complete modernization of rail track system will be able to harness the full potential of high speed operation, otherwise the modern Hyundai trains will operate at the same speed as conventional trains. Therefore, today introduction of high-speed railway transport in Ukraine is highly urgent, which will help to increase competitiveness,

reduce losses of passenger transportation and ensure sustained development of Ukrainian railways.

The analysis of a great volume of statistical data demonstrated that one of the most optimal options for high speed development of transport in Ukraine is building a new route to introduce string transportation by the SkyWay technology. It presents a special automobile on steel wheels located on string rails rested on supports. One of the basic advantages of SkyWay is the fact that it does not use magnetic suspension, magnetic levitation, screen effect, turbine, reactive engine and other popular technologies, which are actually low effective, energy consuming, unreliable and unsafe. In comparison with other modes of transportation SkyWay is cost effective and economical. Besides, the speed in a range of 350-450 km/ph is rather sufficient at the beginning [3]. The results of its economic effect showed that the payback of capital investment is going to be 15 years, if the new route will be constructed between Kyiv and Lviv. It contributes to additional revenues from rail passenger transportation which for today is suffering losses.

References

1. Hyperloop в Україні: як ми продовжимо традиції Ілона Маска [Електронний ресурс] / ПрАТ «Телерадіокомпанія «Люкс», Телеканал новин «24». – Електронні дані. – Київ: Телеканал новин «24», 2005-2018. – Режим доступу: https://24tv.ua/hyperloop_v_ukrayini_shho_tse_take_ta_yak_realizuyut_hyperloop_v_ukrayini_n930314 (дата звернення 28.11.2017) – Назва з екрана.
2. Актуальні проблеми «Укрзалізниці» та можливі шляхи її вирішення [Електронний ресурс] / ГО «Публічний аудит». – Електронні дані. – 11.10.2017. – Режим доступу: <http://publicaudit.com.ua/reports-on-audit/aktualni-problemi-ukrzhaliznitsi-ta-mozhlivi-shlyahi-yih-virishennya/> (дата звернення 28.11.2017) – Назва з екрана.
3. Струнные технологии Юницкого [Електронний ресурс] : [Веб-сайт]. – Електронні дані. – Минск: 1977-2018. Режим доступу: <http://www.yunitskiy.com/> (дата звернення 28.11.2017) – Назва з екрана.

THE PROBLEMS OF TRAFFIC NOISE POLLUTION IN URBAN ENVIRONMENT

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Scientists have recognized officially, that noise pollution is the third among the factors negatively influence people's health. Noise level of 20-30 dB is practically harmless to a person. It is a natural noise background human life can hardly be imagined without. Noise level of up to 65 dB causes the irritation of just psychological character. It is extremely harmful when a person performs some tasks connected with human mental functions. Frequently, such a noise does not